

Nov. 10, 1947.

Dr. Robert Guthrie,
National Institute of Health
Bethesda 14, Maryland.

Dear Guthrie,

I have your postcard asking about reversion in *E. coli*. We haven't published anything about this yet. F.J. Ryan, Dept. Zoology, Columbia University, is doing most of this work, and he has reviewed some of it in his paper in the 1946 Cold Spring Harbor Symposium. About all there is to say is that reverse mutation does take place, that the reversion of different mutant loci in a multiple mutant is mutually independent, with rates of the order 10^{-6} to 10^{-8} per cell per generation in most cases. The number of reverse mutants in a series of similar cultures shows the same high anomalous variance that Luria and Delbrück describe. Finally, one reversion, from lactose-negative to lactose-positive has been analysed genetically and proven to be a reverse mutation. Reversion is evidently a spontaneous process; obviously the composition of a population will be greatly influenced by the relative survival values of the mutant and its reversion.

Howard Mason tells me you have quite a few mutants in strain 58 by now. I would appreciate it if you could let me know whether you would be willing to release any or all of these for my collection.

Best regards,

Sincerely,

Joshua Lederberg
Ass't Professor of Genetics.